

CLAIMS:

1. A method for manufacturing a photomask blank having a film of at least one layer formed on a substrate, comprising
5 the steps of forming a film on a substrate, and irradiating the film with light from a flash lamp.
2. The method of claim 1 wherein the step of forming a film on a substrate includes sputtering.
- 10 3. The method of claim 1 wherein the film of at least one layer has a lower light transmittance than the substrate.
4. The method of claim 1 wherein the film is a phase
15 shift film.
5. The method of claim 4 wherein said phase shift film contains silicon, at least one metal other than silicon, and at least one element selected from the group consisting of
20 oxygen, carbon and nitrogen.
6. A method for manufacturing a photomask comprising the steps of:
forming a patterned resist on the film on the
25 photomask blank manufactured by the method of claim 1, by photolithography,
etching away those portions of the film which are not covered with the resist, and
removing the resist.

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